

From PGFE Molecular Engineering to Systemic Formulations: NIKKOL NIKKOSOME® PV-PF as a Vesicular Penetration Booster

Nikko Chemicals Co., Ltd.

www.nikkol.co.jp/en/

PRODUCT/SERVICE BACKGROUND INFORMATION

Polyglycerin fatty acid esters (PGFEs) have gained immense attention in sustainable cosmetics as plant-derived, PEG-free alternatives. As the industry advances, formulators increasingly require consumer-aligned PGFE chemistries to meet complex multifunctional needs. In skincare, a significant technical hurdle remains delivering water-soluble active ingredients deeply into the stratum corneum without disrupting skin barrier function. Traditional penetration enhancers often destabilize intercellular lipids, leading to irritation and structural impairment. There is a strong demand for innovative delivery systems that balance effective hydrophilic delivery with barrier integrity.

WHAT IS THE COMPANY INTRODUCING TO THE MARKET/INDUSTRY?

Nikko Chemicals introduces a comprehensive technology platform built on the precise molecular control and self-assembly of PGFEs. Combining colloid chemistry, interfacial analysis, and skin science, we offer diverse PGFE solutions, including highly hydrophilic PGFEs, advanced nano emulsification systems and specialized solubilizers. Going beyond basic naturality, we decipher complex surfactant physics to deliver evidence-based functional value. Through tailored molecular design and premix technologies, we provide both customizable ingredients and ready-to-use functional systems to drive cosmetic innovation.

HOW WILL THIS NEW PRODUCT/SERVICE IMPACT THE INDUSTRY (BENEFITS)?

NIKKOL NIKKOSOME® PV-PF is a ready-to-use pre-niosome designed for enhanced hydrophilic delivery. Utilizing "Gentle-Fuse" technology, its double-membrane vesicles rapidly fuse with stratum corneum intercellular lipids. This hydrates the skin and temporarily modulates barrier fluidity without causing structural damage or inflammatory responses (IL-1α). Crucially, it significantly boosts the skin penetration of diverse water-soluble ingredients, ranging from small molecules to high-molecular-weight polymers such as hyaluronic acid. It offers a synergistic moisturizing effect and provides excellent formula stability via simple room-temperature water dispersion.